

Cassava intercropping interplanting and rotation

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Intercropping

Interplanting 套种

Competition and Complementarity

Intercropping will generally decrease the yields of each crop but increase the total income from all crops

Benefit

- Intercrop with long term crop such as rubber and fruit tree. Or plant cassava then plant rubber tree etc. good benefit in short and long term, increase yield and income. cassava income can supple long-term growth tree.
- Intercrop with short term crop such as peanut and soybean, water melon etc. planting first in spring season combine plastic film cover, then cassava, double income than single cassava.

Intercropping cassava with other crops can:

- **suppress weeds**
- **reduce pests and diseases**
- **conserve soil and water**
- **increase farmer's income**

Be aware of the principle factors of intercropping!

- **the degree of competition between crops, and**
- **socio-economic considerations**

2.1 Table 13. Cassava intercrop peanut in Guangxi 1996-1997.

Intercrop ratio cassava : peanut	FY (t/ha)	Dry peanut (t/ha)	Net income (US\$/ha)	Profit rate (%)
Single cassava	28.6	0	712.6	124.0
1:1	28.9	0.66	1054.0	159.0
1:2	28.8	1.25	1329.7	177.8
1:3	28.9	1.56	1487.6	189.4
1:4	27.8	1.68	1452.8	171.4

Table 14. Soil effect of cassava intercrop peanut in 1997.

Inter crop	OM (%)	N (%)	P (%)	K (%)	Available (mg/kg)		
					N	P	K
1:0	1.48	0.13	0.07	0.87	86	64	68
1:1	1.86	0.15	0.08	0.92	92	72	78
1:2	1.93	0.17	0.09	0.96	98	76	81
1:3	1.97	0.19	0.10	1.10	102	83	84
1:4	2.08	0.19	0.12	1.13	106	83	88

2.2 Table 15. Cassava intercrop maize in Guangdong 1998

Maize density (plants/ha)	Fresh yield (t/ha)	Dry maize yield (t/ha)	Net income US\$/ha
30,000	19.7	4.6	288.8
37,500	19.9	5.5	466.9
45,000	20.2	6.4	635.6
52,500	18.7	7.0	656.3





■ Upland rice





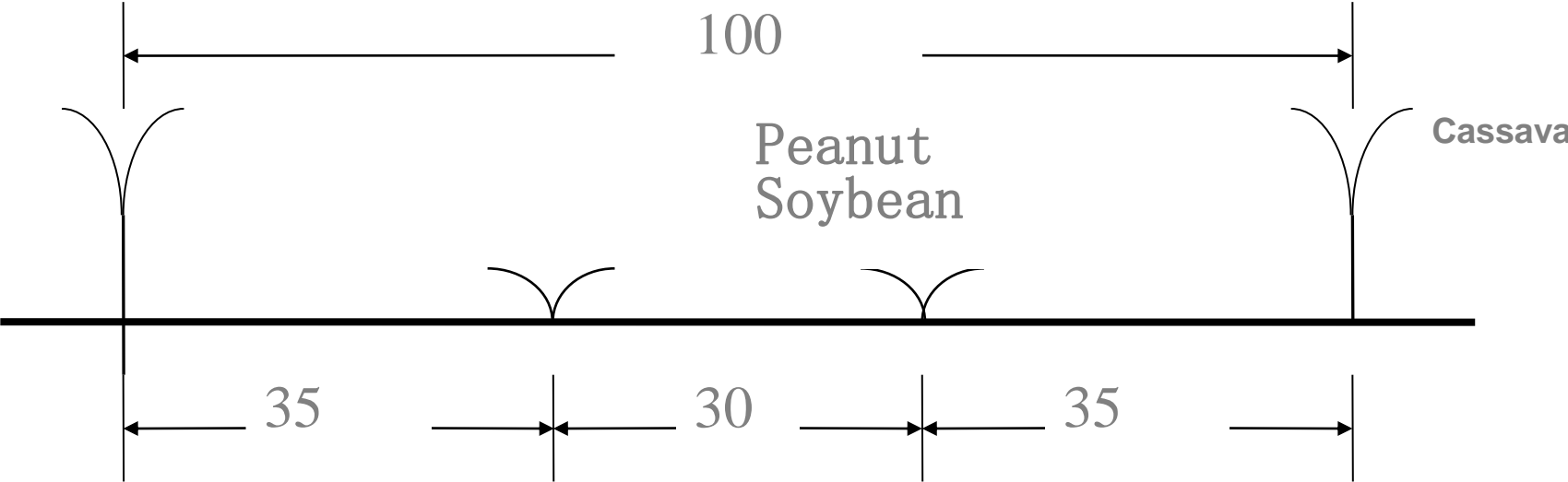
Pumpkin



- **intercropping cassava under young plantation of rubber tree, fruit tree etc. cassava income can supple long-term growth tree.**
- **Not intercrop rubber and cassava in Africa and America because of disease.**

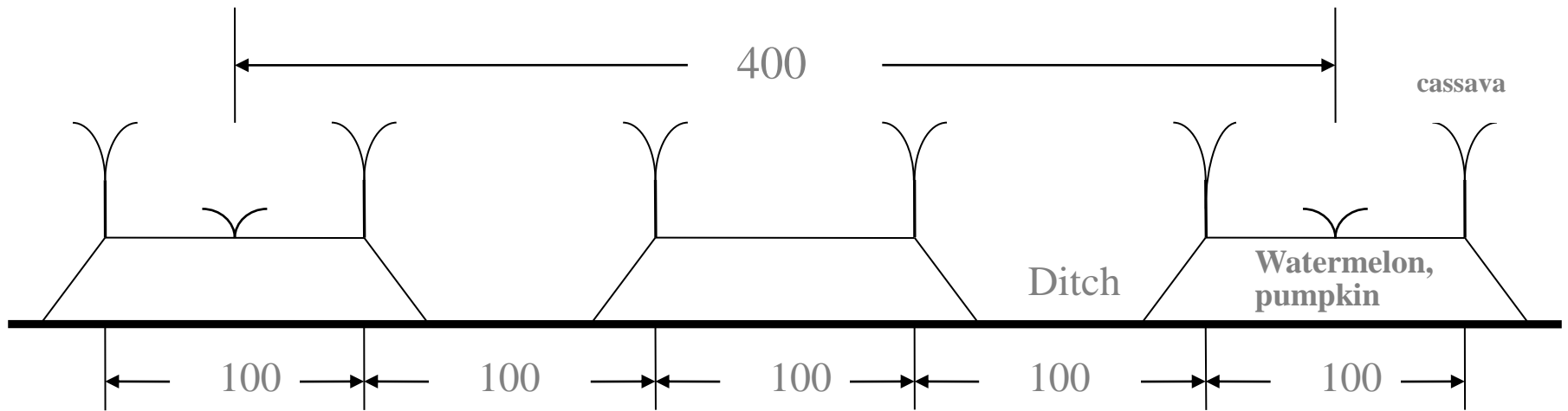
Research on Intercrop or interplant last year

1, Cassava Intercrop Peanut or Soybean

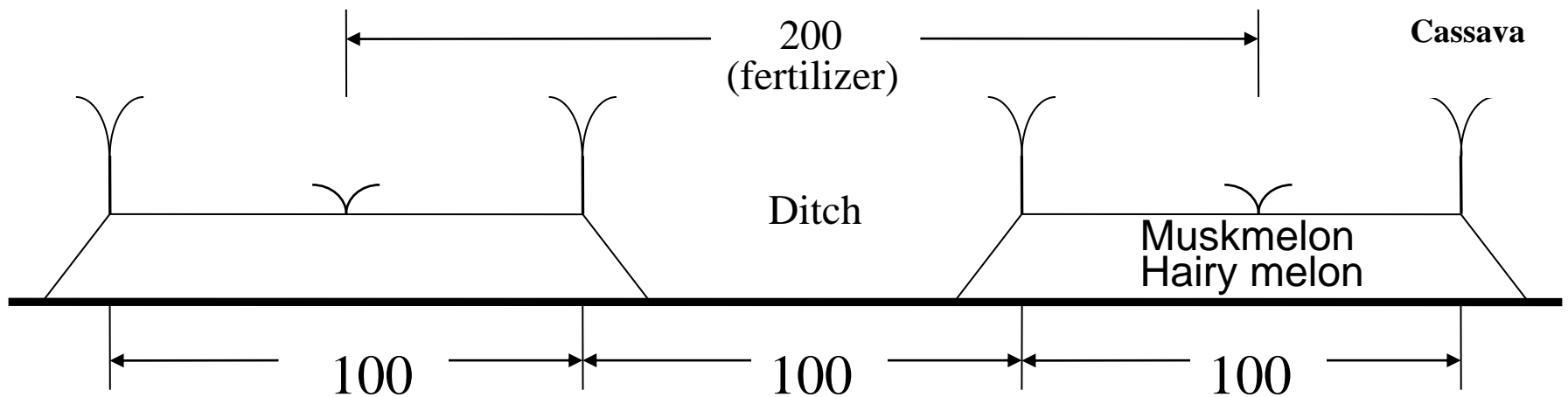


Unit: cm

2, Watermelon or pumpkin interplant cassava.



3, Muskmelon or Hairy Melon Interplant Cassava



High yield model

Cassava FRY (t/ha)		Of single yield(%)	Intercrop or interplant yield	
C	C + inter		crop	(t/ha)
38.6	44.8	116.1	Watermelon	26.4
38.6	45.7	118.4	Pumpkin	18.8
29.8	37.3	125.2	Muskmelon	9.8
38.6	41.6	107.8	Hairymelon	45.0
37.4	39.7	106.1	Peanut	1.5
29.8	35.0	117.4	Soybean	1.4

High effect model

Model	Income (Yuan/ha)		(Yuan/ha)			Of CK income (%)	
	C	Crop	Total income	Total cost	Net income	Total	Net
C (CK)	17370	—	17370	7350	10020	—	—
C+Watermelon	20160	37500	57660	27060	30600	332.0	305.4
C (CK)	17370	—	17370	7350	10020	—	—
C+Pumpkin	20565	31960	52525	26880	25645	302.4	255.9
C (CK)	13410	—	13410	8220	5190	—	—
C+Muskmelon	16785	29400	46185	21825	24360	344.4	469.4
C (CK)	17370	—	17370	7350	10020	—	—
C+Hairymelon	18720	54000	72720	23295	49425	418.7	493.3
C (CK)	16830	—	16830	7593	9237	—	—
C+Peanut	17865	9000	26865	11343	15522	159.6	168.0
C (CK)	13410	—	13410	8220	5190	—	—
^{2012/8/21} C+Soybean	15750	5600	21350 ¹	9420	11930	159.2	229.9 ¹⁸

Summary 2: high yield and high effect

- Compare with single cassava model (CK).
- 6 intercrop and interplant model:
improved 6.1%-25.2% cassava FRY than CK; 1.6-4.2 times total income of CK, 1.7-4.9 times net income of CK.
- Interplant model of Melon were high benefit than the intercropped model of peanut or soybean.
- Above model were 16,800 ha and 60% area in whole Wuming county in 2009.

Rotation

Chairman Mao: New generation is morning Sun

